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(71) Applicant: KOBE STEEL LTD

(72) Inventor: MIYAZAKI TAKAYOSHI

SHIMADA MASAO

MIYATAKE TAKAYUKI

HASE TAKASHI

MURAKAMI YUKINOBU

(54) **NB<sub>3</sub>SN SUPERCONDUCTIVE WIRE MEMBER  
TO OBTAIN HIGH CRITICAL CURRENT  
DENSITY, AND MANUFACTURE THEREOF**

## (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide an Nb<sub>3</sub>Sn superconductive wire member in which compactness can be realized when it is applied to a superconductive magnet, and in which a high critical current density can be obtained at a magnetic field of 11T or more, a manufacturing method thereof, and a superconductive magnet using the Nb<sub>3</sub>Sn superconductive wire member.

**SOLUTION:** For an Nb<sub>3</sub>Sn superconductive wire member in which plural filaments of Nb or Nb alloy are embedded in base material comprising Cu-Sn base alloy, the diameter of the filament is 3 μm or less in the case where the material is used in a magnetic field of 11-18T, and the diameter of the filament is 3-8 μm in the case where it is used in a magnetic field of 18T

or more. In manufacturing the Nb<sub>3</sub>Sn superconductive wire member, a coil to form a magnetic field of 11-18T is heat-treated at 600-700°C, and a coil to form a magnetic field of 18T or more is heat-treated at 700-800°C for obtaining a higher critical current density.

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